

## **REMARKS**

Claims 1-34 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

### **Claim Objections:**

The Examiner objected to claims 1-6, 10, 14, 15, 18-24, and 27-32 because of informalities. Applicants respectfully request that the objections to claims 1-34 be withdrawn for at least the reasons below.

In regard to the objection to claim 1, line 2, the relevant portion of claim 1 has been amended to recite “a grid comprising one or more compute nodes; a master node configured to manage the grid;”.

In regard to the objections to claim 1, line 4, amending “a node” to recite “the one or more compute nodes”, as suggested by the Examiner, would change the scope of the claim by introducing a limitation that is not the intent of the claim. The “a node” recited at claim 1, line 4, is not “the one or more compute nodes”, nor does “a node” refer to one of “the one or more compute nodes”. Therefore, claim 1, line 4 has not been amended as suggested by the Examiner.

In regard to the objection to claim 1, line 7, the relevant portion of claim 1 has been amended to recite “send information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols”.

In regard to the objections to claim 1, line 10 and claim 1, line 12, “the node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 1, line 4.

In regard to the objections to claim 2, line 1 and claim 2, lines 3-4, “the node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 1, line 4.

In regard to the objection to claim 2, line 3, the relevant portion of claim 2 has been amended to recite “send information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols”, which is consistent with amended claim 1.

In regard to the objection to claim 3, lines 1-4, “the node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 1, line 4.

In regard to the objection to claim 3, lines 2-4, amending the phrase “a compute node” to recite “the compute node”, as suggested by the Examiner, would change the scope of the claim by including a limitation that is not the intent of the claim. In claim 3, “the node” was not “previously configured as the compute node”, but was “previously configured as a compute node”, as the claim currently recites. Likewise, “the node is further configured to update configuration of the node as a compute node”, as the claim currently recites. The current language of the claim is clear as to the intent of the claim. Therefore, claim 3, lines 2-4 have not been amended as suggested by the Examiner.

In regard to the objections to claim 4, lines 2-8, claim 5, lines 1-2, and claim 6, lines 3-5, “the node” has not been amended in these claims as suggested by the Examiner for at least the reason given above in regard to the objection to claim 1, line 4.

In regard to the objection to claim 6, line 5, amending the phrase “a compute node” to recite “the compute node”, as suggested by the Examiner, would change the scope of the claim by introducing a limitation that is not the intent of the claim. In claim 6, line 5, what is detected by the master node is that “the node is no longer participating as a compute node in the grid”, as the claim currently recites. The current language of the

claim is clear as to the intent of the claim. Therefore, claim 6, line 5 has not been amended as suggested by the Examiner.

In regard to the first objection to claim 10, line 5, the line has been amended to recite “the grid computing system”.

In regard to the objection to claim 10, line 3, the line has been amended to recite “communicate with one or more of the plurality of nodes”.

In regard to the second objection to claim 10, line 5, the line has been amended to recite “the one or more of the plurality of nodes”. Amending the phrase “the nodes” to recite “the one or more compute nodes”, as suggested by the Examiner, would change the scope of the claim by introducing a limitation that is not the intent of the claim. Applicants further note that there would be no antecedent basis for “the one or more compute nodes” at claim 10, line 5.

In regard to the first objection to claim 14, line 8, the line has been amended to recite “send information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols”.

In regard to the second objection to claim 14, line 8, Applicants have amended claim 14, line 1, to recite “A node, comprising:”. At line 8, “the node” has antecedent basis at amended line 1 of claim 8. Amending “a node” in claim 14, line 8 to recite “the one or more compute nodes”, as suggested by the Examiner, would change the scope of the claim by introducing a limitation that is not the intent of the claim.

In regard to the objection to claim 15, line 3, the relevant portion of claim 15 has been amended to recite “send information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols”, which is consistent with amended claim 14.

In regard to the objection to claim 15, lines 3-5, “the node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the second objection to claim 14, line 8.

In regard to the objection to claim 18, line 3, Applicants have amended claim 18, line 1, to recite “A node, comprising:”. At line 3, “the grid”, as suggested by the Examiner, would not have antecedent basis in the amended claim.

In regard to the objection to claim 19, line 5, the line has been amended to recite “the node sending information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols”.

In regard to the objection to claim 19, lines 5-9, amending “the node” to recite “the one or more compute nodes”, as suggested by the Examiner, would change the scope of the claim by introducing a limitation that is not the intent of the claim. The “the node” recited in claim 19, lines 5-9, is not “the one or more compute nodes”. Therefore, claim 19, lines 5-9 have not been amended as suggested by the Examiner.

In regard to the objection to claim 20, lines 1-3, “the node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 19, lines 5-9.

In regard to the objection to claim 20, lines 2-3, the phrase “a compute node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 3, lines 2-4

In regard to the objections to claim 21, lines 1-7, claim 22, lines 1-2, and claim 23, lines 2-4, “the node” has not been amended in these claims as suggested by the Examiner for at least the reason given above in regard to the objection to claim 19, lines 5-9.

In regard to the objection to claim 24, line 2, “a job” would have no antecedent basis if the line was amended to recite “the job” as suggested by the Examiner. Therefore, claim 24, line 2 has not been amended as suggested by the Examiner.

In regard to the objection to claim 27, line 6, the line has been amended to recite “the node sending information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols”.

In regard to the objection to claim 27, lines 6-10, amending “the node” to recite “the one or more compute nodes”, as suggested by the Examiner, would change the scope of the claim by introducing a limitation that is not the intent of the claim. The “the node” recited in claim 27, lines 6-10, is not “the one or more compute nodes”. Therefore, claim 27, lines 6-10 have not been amended as suggested by the Examiner.

In regard to the objection to claim 28, lines 1-4, “the node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 27, lines 6-10.

In regard to the objection to claim 28, lines 2-4, the phrase “a compute node” has not been amended at these lines as suggested by the Examiner for at least the reason given above in regard to the objection to claim 3, lines 2-4

In regard to the objections to claim 29, lines 2-7 and claim 30, lines 2-3, “the node” has not been amended in these claims as suggested by the Examiner for at least the reason given above in regard to the objection to claim 27, lines 6-10.

In regard to the objection to claim 31, line 5, the phrase “a compute node” has not been amended at this line as suggested by the Examiner for at least the reason given above in regard to the objection to claim 6, line 5.

In regard to the objection to claim 32, line 3, “a job” would have no antecedent basis if the line was amended to recite “the job” as suggested by the Examiner. Therefore, claim 32, line 3 has not been amended as suggested by the Examiner.

**Section 101 Rejection:**

The Examiner rejected claims 1-34 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Applicants respectfully traverse this rejection for at least the reasons below.

In regard to the § 101 rejection of independent claims 1 and 19, the Examiner asserts “[the claims] are drawn toward a grid computing system or a method for discovering a master node and sending the information. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere.”

MPEP 2106.IV.B.2.(b) states that a process is statutory if it is “limited to a practical application in the technological arts” regardless of whether or not there is any pre- or post- process activity. The most famous example of this category is found in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) as discussed in MPEP 2106 where the court stated that the relevant claim was statutory because “the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application ... because it produces ‘a useful, concrete and tangible result’ – a final share price”. Just like transforming data representing discrete dollar amounts to determine a final share price was considered a practical application and thus statutory in *State Street*, a node discovering a master node in accordance with one or more peer-to-peer platform protocols, wherein the master node is configured to manage a grid comprising one or more compute nodes, the node sending the discovered master node information about the node to the discovered master node in

accordance with the one or more peer-to-peer platform protocols, the master node sending grid configuration information to the node in accordance with the one or more peer-to-peer platform protocols, and the node self-configuring as a compute node in the grid in accordance with the grid configuration information, as recited in claims 1 and 19, is a practical application in the technological arts producing a useful, concrete and tangible result – a self-configured compute node in a grid. Both claims result in the node self-configuring as a **compute node in the grid** in accordance with the grid configuration information. What is recited in the claims resulting in a node self-configuring as a compute node in a grid is clearly producing a tangible result, and a practical application in the technological arts. A compute node in a grid is clearly tangible. Furthermore, a compute node in a grid is clearly concrete. Furthermore, enabling a node to self-configure as a compute node in a grid is clearly useful. Thus, claims 1 and 19 are clearly statutory.

Therefore, for at least the reasons presented above, the § 101 rejection of claims 1 and 19 is improper and removal thereof is respectfully requested.

In regard to the § 101 rejection of claims 2-9 and 20-26, claims 2-9 and 20-26 depend from claims 1 and 19, respectively. Therefore, for at least the reasons presented above in regard to claims 1 and 19, the § 101 rejection of claims 2-9 and 20-26 is improper and removal thereof is respectfully requested. In addition, Applicants respectfully traverse the Examiner's assertion that claims 2-9 and 20-26 "do not add any tangible results to the claim". For example, in claims 3 and 20, "update[ing] configuration of the node as a compute node in accordance with the grid configuration information" clearly produces tangible, concrete and useful results - an updated configuration of the node as a compute node. As another example, in claims 5 and 22, "send[ing] the master node notification that the node is leaving the grid in accordance with the one or more peer-to-peer platform protocols" clearly produces tangible, concrete and useful results - a notification to the master node that the node is leaving the grid. As another example, in claims 7 and 24, the master node receiving a job from a job submitter node in accordance with the one or more peer-to-peer platform protocols, the master node

distributing the job to the compute node for execution in accordance with the one or more peer-to-peer platform protocols, the master node receiving results of the execution from the compute node in accordance with the one or more peer-to-peer platform protocols, and the master node sending the results to the job submitter node in accordance with the one or more peer-to-peer platform protocols clearly produces tangible, concrete and useful results.

In regard to the § 101 rejection of independent claim 10, the Examiner asserts “claim 10 is drawn toward a master node for configuring and submitting jobs to compute nodes. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere.”

Referring to MPEP 2106.IV.B.2.(b), just like transforming data representing discrete dollar amounts to determine a final share price was considered a practical application and thus statutory in *State Street*, a master node configured to communicate with the one or more of the plurality of nodes in accordance with one or more peer-to-peer platform protocols to: configure the one or more of the plurality of nodes to participate as compute nodes in the grid computing system; and submit jobs to the compute nodes for execution., as recited in claim 10, is a practical application in the technological arts producing a useful, concrete and tangible result – a grid computing system including the one or more of the plurality of nodes as compute nodes. The claim results in a grid computing system including the one or more of the plurality of nodes as compute nodes to which the master node can submit jobs. What is recited in the claim resulting in a grid computing system including the one or more of the plurality of nodes as compute nodes is clearly producing a tangible result, and a practical application in the technological arts. A grid computing system including the one or more of the plurality of nodes as compute nodes is clearly tangible. Furthermore, a grid computing system including the one or more of the plurality of nodes as compute nodes is clearly concrete. Furthermore, a master node configured to communicate with the one or more of the



plurality of nodes in accordance with one or more peer-to-peer platform protocols to configure the one or more of the plurality of nodes to participate as compute nodes in the grid computing system and to submit jobs to the compute nodes for execution is clearly useful. Thus, claim 10 is clearly statutory. Furthermore, in reference to MPEP 2106.II.A, as discussed above, claim 10 clearly recites a practical application in the technological arts.

Therefore, for at least the reasons presented above, the § 101 rejection of claim 10 is improper and removal thereof is respectfully requested.

In regard to the § 101 rejection of claims 11-13, claims 11-13 depend from claim 10. Therefore, for at least the reasons presented above in regard to claim 10, the § 101 rejection of claims 11-13 is improper and removal thereof is respectfully requested. In addition, Applicants respectfully traverse the Examiner's assertion that claims 11-13 "do not add any tangible results to the claim". For example, in claim 11, the master node is further configured to receive the jobs from the job submitter nodes in accordance with the one or more peer-to-peer platform protocols; receive results of the execution of the jobs from the compute nodes in accordance with the one or more peer-to-peer platform protocols; and send the results to the job submitter nodes in accordance with the one or more peer-to-peer platform protocols" clearly produces tangible, concrete and useful results.

In regard to the § 101 rejection of independent claim 14, the Examiner asserts "claim 14 is drawn toward a program instructions executable by the processor for discovering, sending, receiving and configuring a node. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere."

Referring to MPEP 2106.IV.B.2.(b), just like transforming data representing discrete dollar amounts to determine a final share price was considered a practical

application and thus statutory in *State Street*, a node discovering a master node in accordance with one or more peer-to-peer platform protocols, wherein the master node is configured to manage a grid comprising one or more compute nodes, the node sending the discovered master node information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols, the node receiving grid configuration information from the master node in accordance with the one or more peer-to-peer platform protocols, and the node self-configuring as a compute node in the grid in accordance with the grid configuration information, as recited in claim 14, is a practical application in the technological arts producing a useful, concrete and tangible result – a self-configured compute node in a grid. The results in the node self-configuring as a compute node in the grid in accordance with the grid configuration information. What is recited in the claim resulting in the node self-configuring as a compute node in a grid is clearly producing a tangible result, and a practical application in the technological arts. A node self-configured as a compute node in a grid is clearly tangible. Furthermore, a compute node in a grid is clearly concrete. Furthermore, enabling a node to self-configure as a compute node in a grid is clearly useful. Thus, claim 14 is clearly statutory. Furthermore, in reference to MPEP 2106.II.A, as discussed above, claim 14 clearly recites a practical application in the technological arts.

Therefore, for at least the reasons presented above, the § 101 rejection of claim 14 is improper and removal thereof is respectfully requested.

In regard to the § 101 rejection of claims 15-17, claims 15-17 depend from claim 14. Therefore, for at least the reasons presented above in regard to claim 14, the § 101 rejection of claims 15-17 is improper and removal thereof is respectfully requested. In addition, Applicants respectfully traverse the Examiner's assertion that claims 15-17 "do not add any tangible results to the claim".

In regard to the § 101 rejection of independent claim 18, Applicants note that claim 18 is expressed as means for performing a specified function. Applicants remind the Examiner that under 35 U.S.C. § 112, paragraph 6:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of underlying structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Thus, by statutory definition, the means claim specifically includes structure, material, or acts in support thereof and cannot be construed as software *per se*. In addition, the arguments given above in regard to claim 14 apply equally to claim 18.

Therefore, for at least the reasons presented above, the § 101 rejection of claim 18 is improper and removal thereof is respectfully requested.

In regard to the § 101 rejections of claim 27 and 28-34, the claims have been amended to recite “a computer-accessible storage medium comprising program instructions, wherein the program instructions are computer-executable to implement”. Support for this amendment is found, for example, on page 32, lines 12-15.

In addition, claims 27-34 recite a computer-accessible storage medium comprising program instructions, which are computer-executable to implement a method similar to the method recited in claims 19-26. Therefore, the arguments given above in regard to the § 101 rejections claim 19 and 20-26 would apply equally to claims 27-34.

#### **Section 103(a) Rejection:**

The Examiner rejected claims 1-34 under 35 U.S.C. § 103(a) as being unpatentable over Doyle (U.S. Patent 6,009,455) in view of IEEE Conference Proceeding “When Peer-to-Peer comes Face-to-Face: Collaborative Peer-to-Peer Computing in Mobile Ad Hoc Networks”, by Kortuem et al., published in First International Conference on Peer-to-Peer Computing proceedings, August 2001, Pages 75-91 (hereinafter “IEEE”). Applicants respectfully traverse this rejection for at least the reasons below.

In regard to claim 1, the Examiner asserts that Doyle discloses *A grid computing system*, and states “hereinafter interpreted as a distributed computing system”. Applicants traverse this interpretation because the terms *grid computing system* and *distributed computing system* have distinctly different meanings in the art. One of skill in the art would recognize the distinctions between the two terms. Generally speaking, a distinction between the two terms is that *grid computing system* is a **particular type** of *distributed computing system*; not all *distributed computing systems* are *grid computing systems*. However, in regard to the Doyle reference, Doyle is not describing a general “distributed computing system” of the art. Doyle’s system would be recognized in the art as a **conventional** *grid computing system* as disclosed in the Background section of the instant application. **However, contrary to the Examiner’s assertion, the cited references, alone or in combination, do not teach or suggest a node configured to discover the master node in accordance with one or more peer-to-peer platform protocols and, in response to said discovering the master node, send information about the node to the discovered master node in accordance with the one or more peer-to-peer platform protocols.** The Examiner cites Doyle, reference character 12 in Fig. 2a (as the “client control program”), and Doyle, col. 3, line 64 - col. 4, line 10 as “sending information”). The Examiner acknowledges that Doyle does not disclose *discovering the master node in accordance with one or more peer-to-peer platform protocols*, and relies on IEEE to disclose “discovery” and “peer-to-peer platform protocols”.

The Doyle reference clearly discloses that Doyle’s “client computers” (reference character 11 in Fig. 2a) are already configured as “compute nodes” in Doyle’s “grid”. In Fig. 2a and in the other Figures and accompanying descriptions, Doyle’s “client computers” are always illustrated and described as including the “client control program”. At col. 3, lines , Doyle states (emphasis added):

The client computer 11 is a computer connected to a generic local or wide area network. **On the client computer is a small application-independent client control program 12 that executes when the client computer is not in normal use.**

Doyle describes the client control program in the Abstract:

An application-independent client control program reports availability of client computers, downloads application program files, invokes the application to compute partial results for a range of computation segments, and uploads the partial results to the master computer.

Doyle's description of the client control program, in the above citations and elsewhere, makes it clear that Doyle's client systems are **pre-configured as "compute nodes" in Doyle's grid system**. The "node" recited in claim 1, at discovery of the master node, is **not configured as a compute node in the grid computing system** as recited in claim 1.

Doyle discloses at col. 4, lines 16-20, in reference to Fig. 2b:

Each available client sends an availability signal 16 via the network to the master control program. The availability signal indicates the availability of the available client 17 as well as any resource information gathered by the availability algorithm.

Doyle discloses that the "available clients 17" of Fig. 2b are the same clients as the "client computers 11" illustrated in Fig 2a at col. 4, lines 14-16:

An available client 17 is the same computer as the client computer 11 after the availability algorithm has determined that it is indeed available.

Thus, Doyle's "available client 17" that sends an availability signal 16 to the master control program indicating the availability of the available client 17 as well as any resource information gathered by the availability algorithm is **pre-configured as a "compute node" in Doyle's grid**. The *node discovering the master node and sending information about the node to the discovered master node*, as recited in claim 1 of the instant application, is **not configured as a compute node in the grid computing system as recited in claim 1**.

Furthermore, the cited art, alone or in combination, does not teach or suggest a node, *in response to discovering the master node, sending information about the node to the discovered master node*. Doyle discloses, at col. 3, lines 58-61 (emphasis added):

When the client control program is initially activated or is in the idle state, it executes an availability algorithm. The primary function of the availability algorithm is to notify the master computer that the client is available.

Doyle does not teach or suggest, in this citation or elsewhere, that the availability algorithm sends information about the client computer 11 to the master computer **in response to discovering the master computer**. Doyle clearly teaches that the client control program sends availability (and other) information to the master computer when the client control program is initially activated or is in the idle state. Furthermore, Doyle does not teach or suggest that a client computer 11 would have any need to discover the master computer 5. Doyle discloses that the client computer 11 is pre-configured with a “client control program 12”. The above citation discloses that the availability algorithm on Doyle’s client computer 11 notifies the master computer that the client is available “when the client control program is initially activated or is in the idle state”. Doyle’s client computer 11 appears to be already aware of the master computer 5, and thus it would not be necessary for Doyle’s client computer to discover the master computer.

The cited references, alone or in combination, do not teach or suggest *a node discovering the master node and, in response to said discovering the master node, sending information about the node to the discovered master node*. The Examiner acknowledges that Doyle does not disclose *discovering the master node in accordance with one or more peer-to-peer platform protocols*, and relies on IEEE to disclose “discovery” and “peer-to-peer platform protocols”. However, combining IEEE’s method of discovery with Doyle’s system **would not result in the above limitation**. For example, Doyle’s client computers, which include a “client control program” are clearly **pre-configured** as “compute nodes” in Doyle’s grid. Furthermore, the Doyle reference does not teach or suggest that Doyle’s “client computers 11” have any need for discovery of the master computer. Doyle’s pre-configured “client computers 11”, from Doyle’s description, are already aware of the master computer, and thus Doyle’s system would have no need for discovery as disclosed in IEEE.

In further regard to claim 1, contrary to the Examiner's assertion, the cited references, alone or in combination, do not teach or suggest *wherein the master node is further configured to, in response to said information about the node, send grid configuration information to the node in accordance with the one or more peer-to-peer platform protocols*. The Examiner cites Doyle, "job computation module", reference character 14 in Fig. 2c, and asserts "determine which mode the program should operate based on the job request message from job request means, 1 in Fig. 2c, and sends it to the available clients", citing Doyle, col. 5, line 64 to col. 6, line 16. Contrary to the Examiner's assertion, Doyle, in the cited portions or elsewhere, does not teach that the master computer 5 sends grid configuration information to the node. Instead, Doyle discloses that the master computer 5 sends "commands and files" to the "selected clients 20" of FIG. 2d. The "selected clients 20" are the same as the "available clients 17" of Fig. 2b and the "client computers 11" illustrated in Fig 2a, or at least a selected subset of the clients 17 and client computers 11. Thus, Doyle's "selected clients 20" that receive "commands and files" (col. 6, lines 21-24) from the master computer are **pre-configured as "compute nodes" in Doyle's grid**. In FIGs 2c and 2d and the accompanying discussion that includes the Examiner's cited portions, Doyle clearly discloses that the "commands and files" sent to the "selected clients 20" are intended to configure the selected clients 20 to distribute a portion of a particular job to the selected clients 20 for execution, and do not include "grid configuration information" as disclosed in claim 1 of the instant application. This is made clear in col. 6, lines 24-29:

Each selected client is downloaded with the **job request files** 18 included in the segment group package 19 whose contents are **based on the job request signal 40**. FIG. 2d depicts one select client receiving the files constituting segment group package A, while the other selected client receives the files constituting segment group package B.

Again, Doyle's "selected clients 20" already include the client control program 12 and are already aware of the master computer and thus are **pre-configured as "compute nodes" in Doyle's grid**. There is no need for Doyle's master computer to send grid configuration information to the "selected clients 20" so that the selected nodes can "self-configure" as compute nodes in Doyle's grid; Doyle's "selected clients" are already configured as "compute nodes" in Doyle's grid. FIGs 2c and 2d of

Doyle simply illustrate the distribution of portions of jobs to the selected clients 20 in Doyle's grid.

**In further regard to claim 1, contrary to the Examiner's assertion, the cited references, alone or in combination, does not teach or suggest *wherein the node is further configured to, in response to said grid configuration information, self-configure as a compute node in the grid in accordance with the grid configuration information.*** The Examiner asserts "availability algorithm, 13 in FIG. 2b, concludes the respective client computer as available clients and qualification algorithm, 45 in FIG. 2b, determines the available clients as a candidate to participate in a distributed computation, see e.g., col. 4, lines 11-27". As noted above, Doyle's "client computers 11" and "available clients 17" are **pre-configured** as **"compute nodes" in Doyle's grid**. Doyle's client computers 11 in FIG. 2a **already include Doyle's client control program 12**. The Examiner's assertion that Doyle's system, "[the] availability algorithm concludes the respective client computer as available clients and qualification algorithm...determines the available clients as a candidate to participate in a distributed computation" simply describes Doyle's system determining a set of "selected clients 20" to perform portions of computations for a job. The Examiner's assertion has nothing to do with and is nothing similar to a *node that is not configured as a compute node in a grid, in response to grid configuration information sent by a discovered master node in the grid, self-configuring as a compute node in the grid in accordance with the grid configuration information.* The cited references, alone or in combination, do not teach or suggest *wherein the node is further configured to, in response to said grid configuration information, self-configure as a compute node in the grid in accordance with the grid configuration information.*

Combining IEEE's method of discovery with Doyle's system **would not result in what is recited in claim 1 of the instant application**. For example, Doyle's client computers, which include a "client control program" are clearly **pre-configured** as "compute nodes" in Doyle's grid. The Doyle reference does not teach or suggest that Doyle's "client computers 11" have any need for discovery of the master computer. Doyle's pre-configured "client computers 11", from Doyle's description, are already



aware of the master computer, and thus Doyle's system would have no need for discovery as disclosed in IEEE. **Furthermore, even if the Doyle and IEEE references were properly combinable, the combination would not produce anything like what is recited in claim 1 of the present application.**

Applicants note that neither of the cited references actually provides any motivation to combine the two references. **Moreover, the Examiner's stated reason for combining the references is merely conclusory.** And in any case, as noted above, the cited references, alone or in combination, **do not teach** all of the limitations found in claim 1 of the instant application.

Thus, for at least the reasons presented above, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested.

**In regard to claim 10, the Examiner does not provide a proper *prima facie* rejection under 35 U.S.C. § 103(a) of the claim.** The Examiner rejected independent claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Doyle in view of IEEE. However, the Examiner does not mention the IEEE reference, does not describe a combination of the references, and does not provide any motivation to combine the two references in the rejection of claim 10.

**Moreover, in regard to claim 10, contrary to the Examiner's assertion, the cited references, alone or in combination, do not teach or suggest a *master node configured to communicate with the one or more of the plurality of nodes in accordance with one or more peer-to-peer platform protocols to configure the one or more of the plurality of nodes to participate as compute nodes in the grid computing system*.** As discussed above in regard to claim 1, the Doyle reference clearly discloses that Doyle's "client computers" (reference character 11 in Fig. 2a) are already configured as "compute nodes" in Doyle's "grid". **Thus, there would be no need in Doyle's system for the master computer to communicate with Doyle's client systems 11 to configure the client systems as "compute nodes" in Doyle's "grid".** Doyle's client

systems are described as being pre-configured as “compute nodes” in Doyle’s “grid”. Refer to the above discussion in regard to claim 1 for a more detailed description.

Thus, for at least the reasons presented above, the rejection of claim 10 is not supported by the cited art and removal thereof is respectfully requested.

**In regard to claim 14, the Examiner does not provide a proper *prima facie* rejection under 35 U.S.C. § 103(a) of the claim.** The Examiner only asserts “Doyle discloses a master computer (5 in FIG. 2a) and client computers (11 in FIG. 2a) used in the distributed computing system which inherently include a memory and a processor”. **Claim 14 recites other features that are not addressed by the Examiner.** Claim 14 recites at least some features that are similar to those recited in claim 1, and therefore the arguments given above in regard to the § 103(a) rejection of claim 1 would apply equally to claim 14.

**Furthermore, the Examiner does not provide a proper *prima facie* rejection under 35 U.S.C. § 103(a) of claim 14 because the Examiner rejected independent claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Doyle in view of IEEE.** However, the Examiner does not mention the IEEE reference, does not describe a combination of the references, and does not provide any motivation to combine the two references in the rejection of claim 14.

Thus, for at least the reasons presented above, the rejection of claim 14 is not supported by the cited art and removal thereof is respectfully requested.

**In regard to independent claims 18, 19 and 27, the Examiner did not provide rejections under 35 U.S.C. § 103(a) of the claims in the Office Action.**

**The Examiner rejected claims 8, 12, 16, 25 and 33 under 35 U.S.C. § 103(a) as being unpatentable over Doyle in view of IEEE as applied to claims 1, 10, 14, 19 and 27,**

and further in view of Sun Cluster Grid architecture (Sun Cluster Grid Architecture - a Technical White Paper Describing the Foundation of Sun Grid Computing, published by Sun Microsystems on May 2002), and claims 9, 13, 17, 26 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Doyle in view of IEEE as applied to claims 1, 10, 14, 19 and 27, and further in view of JXTA Chapter 1. Since either the rejections have been shown to be unsupported for the independent claims or the Examiner has failed to provide a proper *prima facie* rejection of the independent claims, further discussion of these § 103(a) rejections is not necessary at this time.

Applicants also assert that numerous ones of the dependent claims recite further distinctions over the cited art. However, since the rejections have been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time.

## **CONCLUSION**

Applicants submit the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-69600/RCK.

Respectfully submitted,

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